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C. Earl Hunter, Commissioner

Promoting and protecting the health of the public and the environment.

REDUCTION OF HAZARDOUS WASTE LEGISLATIVE SUMMARY: 2004 REPORT

The South Carolina Department of Health and Environmental Control (Department) has general authority to conduct studies, investigations, and research with regard to matters related to hazardous waste generation and disposal. Based on this general authority, the Department has prepared this report to describe the current state of affairs with respect to hazardous waste generation and disposal, and in particular, with regard to changes which have occurred in the past year (2004).

WASTE GENERATION AND DISPOSAL

Waste minimization is a policy mandated by the U.S. Congress in the 1984 Hazardous and Solid Waste Amendments to the Resource Conservation and Recovery Act (RCRA). This policy is reflected in the South Carolina Hazardous Waste Management Regulations, as amended. The desire to minimize liability and waste management cost has raised the general interest in waste minimization and waste elimination. Despite the high cost of landfill disposal prices, the use of landfills in the U.S. for managing hazardous waste continues. While there have been many technical advances made toward the reduction of hazardous waste generation, several factors affect the quantity of hazardous waste landfilled. These factors include the price of landfill services, competition in the landfill industry, landfill capacity, regulations, extent of recycling, concern for potential liability issues related to hazardous waste disposal into landfills, and the quantities, new types and composition of wastes.

The only existing hazardous waste landfill in South Carolina is currently undergoing closure activities toward final closure of the facility. The remaining open landfill cell (III B-Extension) began closure in May of 2004 and has not accepted waste since June 2000. The landfill cell closure is scheduled for a duration of 18 months. The closure of all other units except for those necessary for the ongoing management of site-generated waste (see page 2) will also be completed within this period.

Before Closure of the facility began, the Department initiated a Permit modification, which was initially received on February 28, 2002, related to a revised Closure and Post Closure Plan for the entire facility. A final revision dated July 1, 2002 was offered for public comment on August 12, 2002 for a period of 45 days. The Department received comments on the proposed Permit modification decision, which was undergoing evaluation.

On August 1, 2003 a Settlement Agreement and Stipulated Order between the Department and Safety-Kleen was signed, in which bankruptcy claims were settled and the transfer of the Pinewood Site into a Trust was approved by the Department. On December 24, 2003, Safety-Kleen made its first payments to the Trust to cover the cost of closure and post-closure and potential environmental impairment at the Site. On this date Kestrel Horizons, LLC, the approved Trustee officially began its duties at the Pinewood Site and the financial and regulatory responsibility for the Pinewood Hazardous Waste Disposal site was placed on the Trustee. Based on the substantial changes in the Pinewood facility ownership and financial status, the August 12, 2002 proposed Permit modification was offered for an additional 45-day public comment period on April 20, 2004. No comments were received during the public comment period and the Permit modification for a revised Closure and Post Closure Plan became effective on June 16, 2004.

The Trustee also has proposed some operational changes to more effectively and efficiently complete Closure activities and to transition into Post-closure care of the facility. These changes include combining corrective action activities for soil and groundwater at the three remaining Solid Waste Management Units (SWMUs) with a facility-wide storm water management plan. In addition, the Bulk Treatment unit and the Drum Storage building are anticipated to remain open to manage on-site generated waste. The initial cleanup and soil assessment (Stage 1) of these two units will be conducted now and final closure when the units are taken out of service (Stage 2). The Pinewood Site is not receiving off-site waste. Only leachate, leachate-related wastes, and wastes generated from implementing closure activities are and will be managed at the Pinewood Site.

The Department amended Regulation 61-79 to adopt federal amendments through June 30, 2003. The amendment update is the responsibility of the Department in order to maintain compliance with the various federal amendments to the Resource Conservation and Recovery Act regulations. The amendments became final on May 28, 2004.

The most recent amendments include: 1) zinc fertilizer made from recycled hazardous secondary materials, which establishes a more consistent regulatory framework for the practice of making zinc fertilizer products from recycled hazardous secondary materials, 2) treatment standards for some hazardous and radioactive batteries, and 3) technical corrections to combustor standards on regulations promulgated to control emissions of hazardous air pollutants from incinerators, cement kilns and lightweight aggregate kilns that burn hazardous wastes. These rules were published in the Federal Register between July 1, 2002, and June 30, 2003.

Additional information on hazardous waste activities in South Carolina can be obtained from the Department's Compliance and Enforcement Division in the Bureau of Land and Waste Management. This information includes the activities of industries in the State, which regularly generate over 220 pounds (100kg) of hazardous waste per month and pertains to waste generation, treatment, storage, and disposal.

WASTE MINIMIZATION

"Waste Minimization" is the elimination, by source reduction, of any waste stream, or the productive use of any waste that cannot be source reduced. Hazardous waste minimization focuses on source reduction and recycling activities that reduce either the volume or the toxicity of the hazardous waste generated. Waste minimization approaches and techniques in South Carolina include the following:

- Inventory Management and Improved Operations.
- Modification of Equipment.
- Production Process Changes.
- Input Material Substitution.
- Recycling and Reuse.

Waste minimization, recycling, reuse, and waste reduction are performed primarily for three reasons: (1) the economic incentives associated with minimizing waste, (2) the cost associated with environmental compliance, and (3) the potential environmental liability associated with managing waste. As environmental regulations become more stringent, waste management expenditures have increased. The generation of waste is at the expense of resource efficiency.

Economic incentives for waste minimization are the result of several factors including: (1) material efficiency - every pound of purchased material lost to waste is one less pound available for revenue-producing product, (2) worker efficiency - every man-hour spent on managing a waste stream is one less man-hour available to create a return on investment, and (3) regulatory compliance cost - rising costs for transportation, treatment and disposal of wastes, coupled with increased exposure to liability and remediation costs draining resources otherwise available to generate revenue. Because of decreasing efficiencies and increasing compliance costs, waste minimization has become increasingly attractive economically.

Other factors that have the effect of minimizing waste, recalling that the definition includes a reduction in the toxicity of a given waste stream, relate to the elimination of certain chemicals as required by governmental action. For example, hazardous solvents, which are linked to a depletion of atmospheric ozone, are being phased out as a result of the United States' commitment to the Montreal Protocol on Substances that Deplete the Ozone Layer and recent Clean Air Act amendments.

Companies are often searching for non-hazardous substitutes for solvents which typically generate hazardous wastes. For example, companies often use hazardous solvents to clean metal parts before painting. Companies that can find non-hazardous cleaning materials that are adequate substitutes will have waste streams from those specific unit operations that are likely to be less toxic and probably non-hazardous.

Finding such substitutes is often site-specific following a series of detailed pilot tests to demonstrate that the substitute can meet the same cleaning specifications. There are currently no known substitutes which have a broad range of cleaning applications, in comparison to currently used hazardous solvents.

Technical Assistance. Act 196 (1989) provided resources for the Department to establish a technical assistance program for businesses and industry. This program is implemented by the Center for Waste Minimization (Center) and provides free, non-regulatory assistance to help companies identify opportunities for waste reduction and recycling. The Center is also South Carolina's clearinghouse for waste minimization information.

Current activities at the Center for Waste Minimization include forming partnerships with the following groups:

- Other technical assistance providers to maximize assistance delivery efficiency;

- Developing a simple survey and set of data sheets to assist small facilities to understand compliance priorities and recognize areas they may need to address. The survey and data sheets have been developed with the regulator's cooperation, but are non-regulatory and remain at the facility.

- Department regulators to encourage pollution prevention and waste minimization as a way to comply with regulations, reduce the risk to South Carolina's human health and environment, and maintain the non-regulatory nature of the Center's assistance. The Center also works with Department regulators to provide compliance assistance to selected small facilities that may need help in understanding the environmental requirements of the regulations.

Services include:

- Multimedia waste reduction assessments to existing facilities that provide a basis for waste reduction recommendations for new facilities and expansions, as well as for existing facilities.

- Technical assistance in the form of case studies and "how-to" information on a wide variety of waste reduction subjects.

- Information about waste reduction through teleconferences and workshops.

- Solutions that are applicable to wastes generated across industry lines, such as rinsing. Rinsing operations are used in many industries, and the methods for reducing waste have advanced in the metal-plating industry.

- Education about the concept of waste minimization to South Carolina industry.

The Center is an important resource to companies in South Carolina, especially those that do not have the financial and technical resources to evaluate waste minimization options on their own.

The Center provides assistance in areas that address multimedia wastes. Over the last

fourteen years, staff has responded to nearly 3600 individual requests for assistance, including over 800 on-site assessments.

In addition to providing one-on-one technical assistance and teleconferences for industrial training, the Center provides waste minimization resource materials at no charge to businesses and industries in South Carolina.

Such resource materials include:

- Business Recycling Assistance Program (BRAP) News, a newsletter published quarterly in partnership with the Department's Office of Solid Waste Reduction and Recycling, and with the SC Department of Commerce Recycling Market Development Advisory Council, and distributed to over 3000 addresses.

- THE INDEX OF WASTE MINIMIZATION RESOURCES, a compilation of recyclers, vendors, services, and substitute materials available to help minimize waste generation and/or productively use the waste that cannot be eliminated, currently in its ninth yearly printing.

- TO WASTE OR NOT TO WASTE, a nine (9) minute training video addressing the need for companies to have a waste minimization program and for production employees to support these programs.

- A set of seven (7) cartoon posters addressing the high cost of waste.

- Various EPA and Center publications describing successful waste minimization techniques for various industries.

- Compliance Assistance Data Sheets, a brief summary of the regulations approved by the Bureaus of Land and Waste Management, Water, and Air Quality.

HAZARDOUS WASTE MANAGEMENT RESEARCH FUND

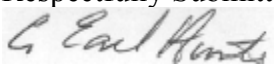
The Hazardous Waste Management Research Fund (HWMRF) was established as an extension of the South Carolina Universities Research and Education Foundation (SCUREF) by 1989 amendments to the South Carolina Hazardous Waste Act. The General Assembly established the HWMRF to "...ensure the availability of funds for the conduct of research related to waste minimization and reduction and for the development of more effective and efficient methods of conducting governmental response actions at uncontrolled hazardous waste sites." The Fund was directed to "...establish a comprehensive research program with a primary emphasis on improving current hazardous waste management practices including, but not limited to, waste minimization and reduction and the development of more effective and efficient methods of conducting governmental response actions at abandoned or uncontrolled hazardous waste sites." The Fund capitalizes on faculty resources at Clemson University, the University of South Carolina, the Medical University of South Carolina and South Carolina State University to provide research and direct assistance on issues related to waste minimization.

The Governor's Pollution Prevention Award. These awards are presented each year by the Fund in conjunction with the South Carolina Environmental Symposium. The 2004 Symposium, co-sponsored with Santee Cooper, Westvaco Corporation, National and South Carolina Wildlife Federations, International Paper-Eastover Mill, the South Carolina Chapter of the Sierra Club, Springs Industries, the South Carolina Department of Natural Resources, and the South Carolina Department of Health and Environmental Control, was held in Charleston in October 2004. Dei-Tec Corporation received the award for small business or industrial facility, and Cox and Dinkins, Inc. received an honorable mention. The Georgetown County Department of Public Services Regional Compost Facility received the award for local government agency. Also receiving an award was the Marine Corps Air Station, Beaufort, for federal government agency, with an honorable mention going to the Marine Corps Recruit Depot, Parris Island.

E_2SC: Environmental Excellence in South Carolina. As the Hazardous Waste Management Research Fund's primary educational outreach effort, *E_2SC* has long provided a forum to which businesses, industries, consultants, and others could turn for in-depth articles, case studies, and practical hands-on information about environmental excellence and sustainability. With articles and columns contributed by both the regulated community and the regulators, the magazine serves a genuine need in South Carolina. Three issues were published in 2004, which included articles on recent federal wetlands law and policy, watershed management, ground-level ozone, turning landfill gas into green energy, and solvent reduction. Each of these issues was distributed to 2900 individuals or businesses.

In summary, waste minimization continues to reduce waste generation through source reduction and recycling activities. The Department shall continue to work diligently with South Carolina businesses and industries to identify ways to minimize the amount of material that requires landfilling. Alternative methods of hazardous waste management, other than landfilling, shall continue to be a priority of the Department while implementing the various hazardous waste management programs within the State.

Respectfully Submitted,



C. Earl Hunter, Commissioner
South Carolina Department of Health and Environmental Control
February 2005